

**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
Honolulu, Hawaii**

December 09, 2005

**Board of Land and  
Natural Resources  
State of Hawaii  
Honolulu, Hawaii**

**Regarding:** Waive the Timeliness of Written Requests For a Contested Case Hearing  
Appointment and Selection of a Hearing Officer to Conduct All Hearings  
for One (1) Contested Case Hearing

**Subject Petitions:** Docket No. HA-06-01

In the matter of a Contested Case request to deny Conservation District Use Application (CDUA) HA-3250 for the Commercial Use of Hand Quarried Volcanic Ash Located at Pu'u Nene, Kaohe, North Hilo, Island of Hawaii, TMK: (3) 3-8-001:001 owned by the State of Hawaii.

**Background**

On November 7, 2005, and November 17, 2005, the Department received two petitions for a Contested Case from Keoni Choy and David Paul to deny Jack Lockwood's CDUA HA-3250 for the Commercial Use of Hand Quarried Volcanic Ash Located at Pu'u Nene, Kaohe, North Hilo, Island of Hawaii, TMK: (3) 3-8-001:001 owned by the State of Hawaii (**Exhibit 1 and 2**).

**Authority for Designating Hearing Officers**

Hawaii Administrative Rules (HAR) §13-1-32 (d) provides that the BLNR may conduct the Contested Case Hearing, or at its discretion, may appoint a hearing officer to conduct the hearing. HAR §13-1-29 (a) provides that, "the time for making an oral or written request and submitting a written petition may be waived by the Board."

Additionally, Hawaii Revised Statutes Sections 92-16 and 171-6 also provide that the Board may delegate to the Chairperson the authority to select the hearing officer to conduct a Contested Case Hearing.

### **Basis for Designating Hearings Officers**

Conducting a Contested Case Hearing may involve: giving notice of hearings, administering oaths, compelling attendance of witnesses and the production of documentary evidence, examining witnesses, certifying acts, issuing subpoenas, making rules, receiving evidence, holding conferences and hearings, fixing filing deadlines, and disposing of other matters that may arise during the orderly and just conduct of a hearing. History suggests that designating a Hearing Officer to perform these actions may provide a more expeditious resolution of the case than having the full Board conduct the hearing.

### **Discussion:**

Staff notes HAR, §13-1-31 (3) notes, "all persons who have some property interest in the land, who lawfully reside on the land, who are adjacent property owners, or who otherwise can demonstrate that they will be so directly and immediately affected by the proposed change that their interest in the proceeding is clearly distinguishable from that of the general public shall be admitted as parties upon timely application."

Staff notes two oral requests to contest the CDUA was made at the public hearing of October 25, 2005. However, written petitions were not received in a timely manner. One petition was received on Monday, November 7, 2005, thirteen days after the public hearing and the other was received on Thursday, November 17, 2005, twenty-three days after the public hearing. Pursuant to HAR, §13-1-29 Request for hearing, the person or agency requesting the contested case hearing must file (or mail and postmark) a written petition with the board not later than ten days after the close of the public hearing. The time for making an oral or written request and submitting a written petition may be waived by the board.

Staff notes that, by designating a Hearing Officer to conduct the hearing, the Board does not relinquish its authority to ultimately decide on the matters being contested. The determinations of standing have not yet been made. Staff believes that the preliminary hearing on standing should also be conducted by the Hearing Officer rather, than the full Board. After the Hearing Officer conducts the preliminary hearing on standing, the Board would still retain its discretion in issuing Orders on this matter of standing. Further, should standing be granted, at the conclusion of the case, the Board would act with its own discretion on the Hearing Officer's Finding of Fact, Conclusion of Law, and Decision and Order.

Staff therefore recommends,

### **Recommendation:**

- 1) That the Board authorize the appointment of a Hearing Officer for CC HA-06-01, and let the Hearing Officer conduct all the hearings relevant to the subject petition for a Contested case Hearing, and

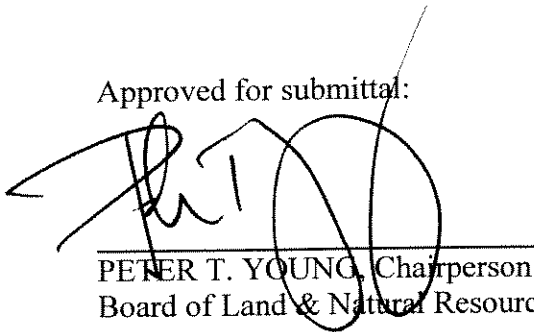
- 2) That the Board delegate the authority for selection of the Hearing Officer to the Chairperson;
- 3) That the Board waive the petitioners' failure to make a written request in a timely manner because an oral request was made at the public hearing which was subsequently followed by a written request.

Respectfully submitted,



K. Tiger Mills, Staff Planner  
Office of Conservation and Coastal Lands

Approved for submittal:



PETER T. YOUNG, Chairperson  
Board of Land & Natural Resources

BOARD OF LAND AND NATURAL RESOURCES

PETITION FOR A CONTESTED CASE HEARING

1. Name David Paul Phone \_\_\_\_\_ Fax \_\_\_\_\_
2. Address P.O. Box 2081, Kea'au, HI. 96749  
Email Address WaikahakaheFarm@msn.com
3. Attorney (if any) \_\_\_\_\_ Phone \_\_\_\_\_ Fax \_\_\_\_\_
4. Address \_\_\_\_\_  
Email Address \_\_\_\_\_
5. Subject Matter: Hand Quarrying of Volcanic Ash at Pu'u Nene
6. Date of Public Hearing/Board Meeting Oct. 25, 2005 5<sup>00</sup>pm
7. Legal authority under which hearing, proceeding or action is being made \_\_\_\_\_  
HRS 343
8. Nature of your specific legal interest in the above matter, including tax map key of property affected: TMK (3)3-8-01:01 (par.) Pu'u Nene.  
State of Hawaii, Conservation District Use Laws.
9. The specific disagreement, denial or grievance with the above matter: The consultant failed to conduct proper Biological Studies of Pu'u Nene. He has no data to back up his "no impact" findings.
10. Outline of specific issues to be raised: A proper Environmental Assessment of Pu'u Nene has not been done. The project intends to dismantle a portion of a Conservation District and sell it.
11. Outline of basic facts: The DLNR is charged with the task of protecting Conservation Lands; including protection from the actions and intents of researchers.
12. The relief or remedy to which you seek or deem yourself entitled: Preservation, Management and Recovery of a Conservation District (Pu'u Nene)  
over →

(If there is not sufficient space to fully answer any of the items above, use additional sheets of paper.)

The above-named person hereby requests and petitions the Board of Land and Natural Resources for a Contested Case hearing in the matter described above. Dated: Nov. 3, 2005

EXHIBIT |

(12.) cont. → Conservation Districts are held in ~~trust~~ for the "public good".

- Digging up materials from a Pūu doesn't benefit the people of Hawai'i, and it should not be let to waste for money.
  - If the State of Hawai'i, DLNR, intends to make money from Pūu Nene then they should invest that money back into the area affected, (Pūu Nene).
  - Restoration of rare conservation sites is for the good of the people!
- Opening Conservation Districts to commercial ventures is against the good of the people! ~~Deny~~ the Permit!

Sincerely, David Paul  
David Paul

HA-06-01

**BOARD OF LAND AND NATURAL RESOURCES**  
**PETITION FOR A CONTESTED CASE HEARING**

RECEIVED  
OFFICE OF CONSERVATION  
NOV -7 A 9:34

1. Name Keoni Choy Phone \_\_\_\_\_ Fax \_\_\_\_\_
2. Address P.O. Box 1094 Ola'a, (Kurtistown) Hawai'i, Hawai'i. (96760)  
Email konohiki1@webtv.net
3. Attorney (if any) \_\_\_\_\_ Phone \_\_\_\_\_ Fax \_\_\_\_\_
4. Address \_\_\_\_\_  
Email Address \_\_\_\_\_
5. Subject Matter: Hand Quarrying of Volcanic Ash at Pu'u Nene
6. Date of Public Hearing/Board Meeting October 25, 2005
7. Legal authority under which hearing, proceeding or action is being made HRS
8. Nature of your specific legal interest in and above matter, including tax map key of property affected: TMK (3)3-8-01-01 (por.) "PU'U 'OMAOKOILI" from-MAP OF THE ISLAND OF HAWAII, Hawaii Territorial Survey December-1928. Constitutional and statute interest as a Beneficiary of the Hawaiian trust. Active user of the resources of the proposed project area.
9. The specific disagreement, denial or grievance with the above matter: It is my contention that this application lacks at least one of the Fundamental Elements required for the use of this property. The requested use reduces the corpus of the trust without an order from the probate court. State of Hawaii is not following its own laws that requires the preparation of an EIS triggered by: 1 use of State or Hawaii county lands or funds & 2 use in a Conservation District. The removal of soil from Hawaii.
10. Outline of specific issues to be raised: Any reduction of the corpus of the trust requires the permission of the probate court. I have not at any time received notice from the probate court, DLNR, the Applicant or any other entity or person promoting this use, that my rights as a beneficiary of the Hawaiian Trust will be affected by an order from the probate court, absent of this notice & without that order, State of Hawaii, DLNR does not have jurisdiction to consider this application for this use. Besides being a beneficiary of this trust, I am also an active user of the resources of this Pu'u and all surrounding areas. This includes all lands positively identified as trust land, and in all of those areas, I hold constitutional and statutory interest.
11. Outline of basic facts: This Pu'u has been damaged by prior excavations and this damage has diminished my potential for use of this property. The property identified for this use is part of the Corpus of the Hawaiian Land Trust (portions of which are known as ceded land trust). The land is in the Hawaiian Archipelago.
12. The relief or remedy to which you seek or deem yourself entitled: Reject the Permit for lack of Jurisdiction to grant this use without probate court permission. Preserve the Pu'u for future generations. Fence and manage this landmark [Pu'u Omaokoili (Pu'u Nene)].

(If there is not sufficient space to fully answer any of the items above, use additional sheets of paper.)

**The above-named person hereby requests and petitions the Board of Land and Natural Resources for a Contested Case hearing in the matter described above. Dated: Nov. 03 2005**

**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**OFFICE OF CONSERVATION AND COASTAL LANDS**  
Honolulu, Hawaii

REF:OCCL:DH

CDUA OA-3264

Acceptance Date: October 7, 2005  
180-day Exp. Date: April 5, 2006

December 9, 2005

**Board of Land and  
Natural Resources  
State of Hawaii  
Honolulu, Hawaii**

**REGARDING:** After-the-Fact Conservation District Use Application (CDUA) OA-3264 for University of Hawaii (UH) at Manoa, Lyon Arboretum

**APPLICANT:** George Atta, Group 70 International, 925 Bethel Street, 5<sup>th</sup> Avenue, Honolulu, Hawaii 96813 for the University of Hawaii at Manoa, Office of the Vice Chancellor for Research and Graduate Education, 211 Hawaii Hall, Honolulu, Hawaii 96822

**LAND OWNERSHIP:** University of Hawaii at Manoa

**TMK:** (1) 2-9-055:006, and 007

**AREA OF USE:** Subject Parcel TMK: (1) 2-9-055:006 Approximately 124 Acres  
Subject Parcel TMK: (1) 2-9-055:007 Approximately 69.5 Acres

**AREA OF PARCEL:** 193.5 Acres

**LOCATION:** Manoa Valley, Honolulu, Island of Oahu

**SUBZONE:** Resource

**PRIOR CONSERVATION DISTRICT USE PERMIT (CDUP)**

On July 8, 1983, the Board of Land and Natural Resources (Board) approved CDUA OA-1552 to construct a 1,536 square foot greenhouse, and was subject to eight terms and conditions. On August 9, 1985, September 12, 1986, and on July 8, 1988, the Board approved three amendment requests to: 1) construct a 416 square foot teaching greenhouse; 2) widen and improve the grade of the access road, relocate the public entry to Cottage H, grade the foundation for a 1,200 square foot greenhouse

(to be located behind Cottage D -conservation greenhouse)<sup>1</sup>; and 3) to widen the roadway; all were subject to CDUP OA-1552 terms and conditions (**Exhibit 1**). Other approvals were given by the Department of Land and Natural Resources (DLNR) to construct the conservation greenhouse (approved by the Board at the February 12, 1988), and to construct two temporary 228 square foot snail greenhouses. On October 29, 1996, the department approved the relocation to the 'potters shed' location.

### **PRIOR ENFORCEMENT CASE OA-05-28**

On December 10, 2004, the Board found that the University of Hawaii (UH) violated the provisions of Chapter 183C, Hawaii Revised Statutes (HRS), and Chapter 13-5, Hawaii Administrative Rules (HAR), in seven (7) instances. Lyon Arboretum (arboretum) was to submit and expedite an After-The-Fact (ATF) CDUA for: 1) the structures constructed after 1964<sup>2</sup>; 2) for the renovated cottages<sup>3</sup> and wood workshop/garage; 3) for the landscaped features; and 4) current commercial activities (**Exhibit 2**).

### **DESCRIPTION OF AREA/CURRENT USE:**

Subject parcel's TMK: (1) 2-9-055:006 and TMK: (1) 2-9-055:007 comprise the area known as the College of Natural Sciences, Lyon Arboretum. Both subject parcels are bounded to the south, west, and east by private landowners. Access to the arboretum is located at the end of Manoa Road. The subject parcel is located in the State Land Use (SLU) Conservation District, Resource subzone (**Exhibit 3**).

Prior to the arboretum inception, free-ranging cattle and alien grass devastated the area. In 1918 the Hawaii Sugar Planters' Association (HSPA) designated the site as a forest restoration project site, where sugarcane and vegetation experiments occurred. In 1953 the HSPA gave the (Manoa) arboretum to the UH under the condition they "maintain and preserve the granted premises as an arboretum and botanical garden only...the arboretum is to be used for research, education, and public service." The arboretum structures contained: sugar cane plantation buildings; equipment sheds, and barns. Emphasis was on forestry but switched to horticulture after UH took control. In 1972, the arboretum was opened to the public, and since 2002 has been open seven days; it receives approximately 34,000 visitors a year. The UH used the site as a horticultural and botanical resource.

Currently the arboretum serves as a center for the rescue and propagation of rare and endangered native Hawaiian plants. Emphasis is on tropical plants, native Hawaiian plants, conservation biology and Hawaiian ethnobotany. The following principles are followed: 1) maintenance and development of diversity of research collections; 2) maintenance of landscaping on the lower grounds; 3)

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1 Staff notes the amended CDUP was only for the grading of the greenhouse platform, however the staff report noted the request was for the greenhouse construction, and the Board permit letter notes approval of the renovation and construction of the greenhouse.

2 This included the following land uses: Children's Learning Center, prefabricated storage shed, large greenhouse/head house/shade house/acclimation yard, visitor kiosk, Fern Valley rain shelter and Spice Garden Pavilion.

3 This includes renovations to Cottages B, C, D, H, and F.



reduction of density and distribution of invasive species; 4) improvement of Hawaiian cultural landscapes, improvement of research and production to work to restore native plants species, and other conservation activities; 5) greenhouse activities (greenhouse propagation, micro-propagation, seed storage). Efforts also center on the maintenance of trails/pathways, ADA accessibility, infrastructure improvements and maintenance of arboretum facilities and structures.

Eight cottages were constructed from 1920 to 1929 adjacent to the driveway<sup>4</sup>; cottages serve as rental units and offices. Three garages/workshops are located on the mauka side of the driveway<sup>5</sup>. Six greenhouses are located adjacent to the main driveway, and to the cottages; varying in size, and structure, and function.<sup>6</sup> Other land uses include a Children's Learning Center, rain shelters, the Spice Garden Pavilion, a visitor kiosk, seismographic station, water tank, and Quonset hut.

Landscaped features include: informative signage(s), statutes, and sundials. Water features include the Hong Yip Young Memorial Garden pond and fountain; and a loi located to the east and west of Aihualama Stream.<sup>7</sup> Educational exhibits have been erected for hands-on education experience. Multiple paths and trails exist consisting of concrete slab stones, stones, and dirt through the arboretum. The trails vary from easily accessible gravel pathways, to steep narrow pig trails. Trails are based on: former agricultural activity trails; access roads to houses; paths cut to older plant projects; and access to current collections of plants. New trails are being added in the restoration section.

The arboretum collection includes approximately 1,500 native accessions and approximately 15,000 accessions of alien species (palms, bromeliads, aroids, figs, ancient Hawaiian cultivars, etc.). The "lower ground" (20 acres) and "research section" (160 acres) contain the thematic sections (among them the spice and herb collection, Hawaiian Ethnobotany Garden, Ginger Collection, Palm Collection, Ornamental ti Collection, etc). The "research section" has been extended to include all the valleys below the "restoration section." Plant collections in the "restoration section" (10 acres) are separated by the ten valleys: *Valley 1*: fern and cycad collections/displays; *Valley 2*: aroids undeveloped; *Valley 3*: Native Hawaiian plants; *Valley 4*: African and Madagascar palms; *Valley 5*: Asian and American Palms; *Valley 6*: Pacific Palm section and Aihualama Falls; and *Valleys 7 – 10*: Miscellaneous Tree Collection. There are 302 species of plants that are recognized as threatened or endangered.

Fauna on the subject parcel contains Cockatoos, Mynas, White-rumped Shama thrushes, Mejiro, Common waxbills, North cardinals, Brazillian cardinals, bulbuls, doves, house finches, and sparrows

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4 The cottages were renovated after Mr. Lyon passed away to support the arboretum's budget.

5 The renovated wood workshed/storage shed is located across from Cottage B; a garage/storage shed located across from Cottages D & E; the "stone" garage located across from Cottage A.

6 The following was seen: 1) the two snail greenhouses (behind Cottage A); 2) conservation greenhouse (between Cottages C and D); 3) 1930 greenhouse (adjacent to Cottage F); 4) certified plant greenhouse (behind Cottage F and G); 5) large greenhouse (main parking lot); and 6) teaching greenhouse (behind Cottage H). A prefabricated storage shed (located behind Cottage C) is being used for greenhouse activities.

7 The west side loi has been used for growing kalo, ko, uala, maia, and has been in use since the 1930's. The east side loi contains the presence of ancient pre-historic loi walls and auwai, and is currently not in use.

The research section is located within Elepaio critical habitat boundary; the bird is a candidate for the Endangered list. The endemic amakihi is also seen in the arboretum. Feral ungulates are present and transverse the arboretum area.

Commercial activities were established to support and maintain the arboretum: the establishment of a visitor gift shop; non-commercial and commercial plant sales; education classes; Awa Festival; cottage rentals; weddings; memorial marker program – benches, trees; memorial services; commercial and non-commercial ventures; commercial tours by eco tour companies; and the sale of small items (pottery, wood benches, seed jewelry, lei, jams, jellies, flowers, etc.)(**Exhibit 4**).

#### **PROPOSED USE:**

The applicant is asking for ATF CDUA approval for: 1) the renovated Cottages B, C, D, H, and F, workshop/garage; 2) construction of new structures and land uses constructed after 1964 (Children's Learning Center, prefabricated storage shed, large greenhouse/head house/shade house/acclimation yard, visitor kiosk, Fern Valley rain shelter and Spice Garden Pavilion, landscaped features); 3) landscaped features (memorial garden, water features, signs, statutes, benches, trails and pathways, drainage; and 4) commercial uses (visitor gift shop, plant sales, education classes, Awa Festival, weddings, memorial services, etc.).

#### **SUMMARY OF COMMENTS:**

The OCCL requested comments from the following agencies regarding the proposed project: Division of Aquatic Resources (DAR), Division of Forestry and Wildlife (DOFAW), Historic Preservation Division (HPD), and Oahu District Land Office (ODLO); City and County of Honolulu, Department of Planning and Permitting (DPP), Department of Parks and Recreation (DPR), Office of Hawaiian Affairs (OHA), Office of Environmental Quality Control (OEQC), Manoa Neighborhood Board, and the Manoa Public Library for review and comment. The following comments were received:

##### Division of Forestry and Wildlife

*No Comment*

##### Oahu District Land Office

*No Comment*

##### Office of Hawaiian Affairs

OHA requests an archeological inventory survey and Preservation Plan be prepared. Should iwi or Native Hawaiian cultural traditional deposits be found, work will cease, and the appropriate agencies will be contacted. Although Native Hawaiian traditional and customary gathering, access and use rights are not anticipated to be disturbed, the applicant should remain vigilant that these rights are not restricted.

*Applicant's Response: The current ATF CDUA is for activities that have occurred; for any new construction and/or renovation activity a CDUA and Environmental Assessment will need to be submitted and at that time the need for an archeological inventory survey and Preservation plan will*

*be determined. If previously unidentified sites or remains are encountered activities will cease, 6E HRS will be implemented, HPD will be notified, and activities will be suspended until further recommendations are made for treatment or archeological and cultural materials.*

#### **PUBLIC HEARING NOVEMBER 28, 2005:**

A Public Hearing was held at the Kalanimoku Building, 1155 Punchbowl Street, Honolulu, Hawaii. The public showed support for the CDUA as the arboretum will is recognized as a center for education, and botanical and horticultural activities.

#### **ANALYSIS:**

After reviewing the application, the department found that:

1. The proposed use is an identified land use in the Conservation District, according to Section 13-5-23, Hawaii Administrative Rules (HAR), L-2, BOTANICAL GARDENS AND PRIVATE PARKS, D-1; "Botanical gardens and private parks under and approved management plan." Please be advised, however, that this finding does not constitute approval of the proposal;
2. A public hearing will be required pursuant to HAR, Section 13-5-40, "all applications for a proposed use of land for commercial purposes;" and
3. In conformance with Chapter 343, Hawaii Revised Statutes (HRS), as amended, and HAR, Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules; the applicant has issued a Final Environmental Assessment dated June 2005 stating a Finding of No Significant Impact (FONSI) on the environment.

#### **SECTION 13-5-30 HAR**

The following discussion evaluates the merits of the proposed land use by applying the criteria established in Section 13-5-30, HAR.

1. *The proposed land use is consistent with the purpose of the Conservation District.*

The objective of the Conservation District is to conserve, protect and preserve the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare.

Staff notes that the proposed land uses are identified land uses in the Conservation District. Staff notes that the proposed project has been designed to minimize potential adverse impacts on the area and its natural resources.

2. *The proposed land use is consistent with the objectives of the subzone of the land on which the use will occur.*

The objective of the Resource subzone is to develop, with proper management, areas to ensure sustained use of the natural resources of the area.

Staff is of the opinion that the proposed land use is consistent with the Resource subzone's identified land use(s).

3. *The proposed land use complies with provisions and guidelines contained in Chapter 205A, HRS, entitled "Coastal Zone Management," where applicable.*

The project is not located within the County's Special Management Area. It does comply with the provisions identified in Chapter 205A, HRS in the following areas: Recreation Resources, Historical/Cultural Resources, Managing Development, and Scenic and Open Space Resources.

4. *The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.*

Staff notes while the request is for an ATF CDUA, and not for a new building and/or land use, so there should be minimal changes to the existing impacts on the surrounding area, community and region. Staff further notes the uses will have a beneficial impact on existing resources, as the arboretum has a management plan in place to guide it.

5. *The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels.*

Staff notes there will be minimal impact on the physical and natural environment and the nature of the area, and the proposed improvements are compatible with the locality and surrounding areas. Staff notes the proposed land use is appropriate to the physical conditions of the parcel.

6. *The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, whichever is applicable.*

Staff notes the natural beauty and open space characteristics of the area will be preserved.

7. *Subdivision of land will not be utilized to increase the intensity of land uses in the conservation district.*

Staff notes the proposed project does not involve the subdivision of land in the conservation district.

8. *The proposed land use will not be materially detrimental to the public health, safety and welfare.*

The proposed project request is for an ATF CDUA. Staff notes the proposed project will not be detrimental to public health, safety, and welfare.

## DISCUSSION:

Staff notes the applicant is requesting ATF CDUA approval to resolve Enforcement Case OA-05-28, and to meet the Board's terms and conditions. Staff notes the proposed use is an identified land use in the Conservation District, according to Section 13-5-23, HAR, L-2, BOTANICAL GARDENS AND PRIVATE PARKS, D-1; "Botanical gardens and private parks under and approved management plan."

Staff notes the arboretum's aim is threefold: 1) horticultural development; 2) native plant conservation; and 3) education for all ages. Staff believes the arboretum has been effective in public education to educate the community and visitors about Hawaii's native and non-native vegetation.

Staff notes a Management Plan<sup>8</sup> has been submitted for the arboretum, which sufficiently addresses the current land uses. However, staff anticipates the aging infrastructure will need to be maintained: ADA improvements, replacement of the waster water system, renovations and maintenance of the cottages, electrical upgrades, parking and roadway improvements will occur. In addition, the arboretum will need to continue: 1) tree and shrub maintenance (removal of branches, trimming, treatment, pruning); 2) trail maintenance; 3) weed control; 4) clearing (area clogged of invasive growth for more than 10 years) and re-clearing the grounds (removal of invasive growth after 2-10 years of uncontrolled growth); and 5) continue research and restoration projects.

The ATF CDUA also includes the construction of a traditional Hawaiian Hale, Rain Shelter, and loi Restoration. However, staff is concerned with the lack of archeological surveys, and that any work occurring to the loi walls, heiau, large and small ahu located to the west and east of Aihualama Stream shall have prior Historic Preservation Division (HPD) approval.

Staff points out the arboretum is in partnership with the Halau Ku Mana New Century Public Charter School to restore the loi. Staff notes the charter school if operating on arboretum land as a school it should apply for a CDUA, as this use is different from the requested arboretum use as CDUA OA-3264 is to resolve Enforcement Case OA-05-28. This holds true for any other proposed land uses that Lyon arboretum proposes, such as future classrooms, buildings, cottages, etc.

Lastly, staff notes the proposed project is a semi-wilderness area, next to a wilderness and the urban fringe area of Manoa Valley. It will therefore serve as a passive buffer and transition zone from urban to wilderness area and its surrounding environs. Staff feels that the proposed project's improvements within the Resource subzone are warranted because of the positive benefits to the general public, and because the area has been previously disturbed.

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<sup>8</sup> NOTE: A Master Plan will be developed for the arboretum to be approved by the Board of Regents is separate from the Management Plan supplied to the DLNR for approval by the Board for the ATF CDUA.

Staff, therefore, recommends as follows:

**RECOMMENDATION:**

That the Board of Land and Natural Resources APPROVE ATF CDUA OA-3264 for Lyon Arboretum, subject to the following terms and conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, State and county governments, and the applicable parts of Section 13-5-42, HAR;
2. The applicant shall comply with all applicable Department of Health administrative rules. Particular attention should be paid to Hawaii Administrative Rules (HAR), Section 11-60.1-33, "Fugitive Dust" and to Chapter 11-46, "Community Noise Control," and Chapter 11-54 National Pollutant Discharge Elimination System;
3. Before proceeding with any work authorized by the Board, the applicant shall submit four copies of the construction plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three copies will be returned to the applicant. Plan approval by the Chairperson does not constitute approval required from other agencies;
4. Any work or construction to be done on the land shall be initiated within one year of the approval of such use, in accordance with construction plans that have been approved by the Department; further, all work and construction must be completed within three years of the approval;
5. The applicant shall notify the Office of Conservation and Coastal Lands in writing prior to the initiation, and upon completion, of the project;
6. Prior to beginning ground disturbance of any work to the loi walls, heiau, large and small ahu located to the west and east of Aihualama Stream, Lyon Arboretum shall obtain Historic Preservation Division (HPD) approval;
7. All mitigation measures set forth in the application materials, in the Final Environmental Assessment, for this project are hereby incorporated as conditions of the permit;
8. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the applicant shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard;
9. The applicant understands and agrees that this permit does not convey any vested rights or exclusive privilege;

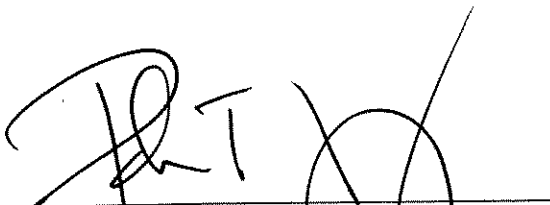
10. In issuing this permit, the Department and Board have relied on the information and data that the applicant has provided in connection with this permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Department may, in addition, institute appropriate legal proceedings;
11. In the event that unrecorded historic remains (i.e., artifacts, or human skeletal remains) are inadvertently uncovered during construction or operations, all work shall cease in the vicinity and the applicant shall immediately contact the State Historic Preservation Division;
12. Other terms and conditions as may be prescribed by the Chairperson; and
13. That failure to comply with any of these conditions may render this Conservation District Use Permit null and void.

Respectfully submitted,



DAWN T. HEGGER  
Staff Planner

By:

  
\_\_\_\_\_  
PETER T. YOUNG, Chairperson  
Board of Land and Natural Resources

JUL 14 1983

REF. NO.: CPO-021  
FILE NO.: OA-2/14/83-1552  
180-Day Exp. Date: 3/13/83

Mr. Harold S. Masumoto  
Vice President for Administration  
University of Hawaii  
2444 Dole Street, Room 201  
Honolulu, Hawaii 96822

Dear Mr. Masumoto:

Conservation District Use Application for Construction of a  
Research Greenhouse at Lyon Arboretum, Manoa Valley,  
Oahu, Hawaii, at TMK: 2-9-55: 6

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We are pleased to inform you that the Board of Land and Natural Resources, at its meeting of July 8, 1983, approved your application subject to the following conditions:

1. That the applicant comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and City and County governments, and applicable parts of Section 13-2-21 of Title 13, Chapter 2, Administrative Rules, as amended;
2. The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors and agents under this permit or relating to or connected with the granting of this permit;
3. Other terms and conditions as prescribed by the Chairman;
4. In the event any unanticipated sites or remains such as shell, bone or charcoal deposits, human burials, rock or coral alignments, pavings, or walls are encountered during construction, the applicant shall stop work and contact the Historic Preservation Office at 548-7460 or 548-6408;

EXHIBIT 1



JUL 14 1983

CPO-021  
OA-1552

5. A fire contingency plan, acceptable to the Division of Forestry and Wildlife shall be implemented during and after the construction of the greenhouse;
6. That the applicant comply with all applicable Public Health Regulations;
7. The construction, alteration, moving, demolition and repair of any building or other improvement on lands within the Conservation District, shall be subject to the building codes of the respective counties in which the lands are located; provided that prior to the commencement of any construction, alteration or repair of any building or other improvement, four (4) copies each of the final location map, plans and specifications shall be submitted to the Chairman, or his authorized representative, for approval;
8. Upon approval of a particular use by the Board, any work or construction to be done on the land shall be initiated within one (1) year of the approval of such use, and, all work and construction must be completed within three (3) years of the approval of such use.

Should you have any questions on any of these conditions, please contact Mr. Roger C. Evans of our Planning Office at 548-7837.

Very truly yours,

SUSUMU ONO, Chairman  
~~BOARD OF LAND AND NATURAL RESOURCES~~

SUSUMU ONO, Chairperson  
Board of Land and Natural Resources

xc: Oahu Board Members  
Oahu District Land Agent  
Dept. of General Planning  
DOH/OEQC/EQC/DPED/OHA

bxc: DAR  
DOFAW  
DOCARE  
DOWALD  
NARS  
Land Management  
State Parks/Hist. Sites

SS:rw

SS. *dc*

GEORGE R. ARIYOSHI  
GOVERNOR OF HAWAII

RECEIVED

'86 NOV 7 PM 4:32

DLIR  
OCEA



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
P. O. BOX 621  
HONOLULU, HAWAII 96809

SUSUMU ONO, CHAIRMAN  
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU  
DEPUTY TO THE CHAIRMAN

DIVISIONS:  
AQUACULTURE DEVELOPMENT  
PROGRAM  
AQUATIC RESOURCES  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

OCT 30 1986

FILE NO.: OA-2/14/83-1552A  
180-Day Exp. Date:  
DOCUMENT NO.: 1925B

Mr. Harold S. Masumoto  
Vice President for Administration  
University of Hawaii  
2444 Dole Street, Room 201  
Honolulu, Hawaii 96822

Dear Mr. Masumoto:

We are pleased to inform you that your Conservation District Use Application for renovation and construction of a greenhouse at Lyon Arboretum, Manoa Valley, Oahu, Hawaii at TMK: 2-9-55: 6 was approved on September 12, 1986 subject to the following conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments, and applicable parts of Section 13-2-21, Administrative Rules, as amended;
2. The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury and death arising out of any act or omission of the applicant, its successors, assigns, officers, employees, contractors and agents under this permit or relating to or connected with the granting of this permit;
3. Other terms and conditions as prescribed by the chairperson;
4. If any unanticipated sites or remains of historic or prehistoric interest (such as shell, bone or charcoal deposits, human burials, rock or coral alignments, paving, or walls) are encountered during construction, the applicant shall stop work and contact the Historic Preservation Office at 548-7460 or 548-6408 immediately;



*[Handwritten signature]*

RECEIVED  
98 NOV 6 P 1:29

5. A fire contingency plan, acceptable to the Division of Forestry and Wildlife, Department of Land and Natural Resources, shall be implemented during and after construction of the greenhouse;
6. The applicant shall comply with all applicable Public Health Regulations;
7. The construction, alteration, moving, demolition and repair of any building or other improvements on lands within the Conservation District, shall be subject to the building codes of the respective counties in which the lands are located; provided that prior to the commencement of any construction, alteration, or repair of any building, or other improvement four (4) copies each of the final location map, plans, and specifications shall be submitted to the Chairperson, or his authorized representative, for approval of which three (3) copies will be returned;
8. Any work or construction to be done on the land shall be initiated within one (1) year of the approval of such use, and all work and construction must be completed within three (3) years of the approval of such use. Failure to comply with this condition shall render this application null and void; and
9. Any further improvements to the physical facilities must be accompanied by a master plan for the Arboretum.

Please acknowledge receipt of this permit, with the above noted conditions, in the space provided below. Please sign two copies. Retain one and return the other.

Mr. Harold S. Masumoto

- 3 -

OA-1552A

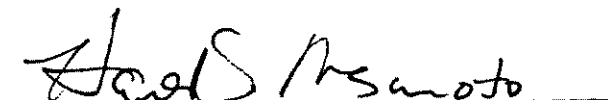
Should you have any questions on any of these conditions, please feel free to contact our Office of Conservation and Environmental Affairs staff at 548-7837.

Very truly yours,



SUSUMU ONO, Chairperson  
Board of Land and Natural Resources

Receipt acknowledged

  
Applicant's Signature

cc: Oahu Board Member  
Oahu Land Agent  
C&C Department of General Planning  
DOH/OEQC/EC/OHA/DPED



UNIVERSITY OF HAWAII

VICE PRESIDENT FOR FINANCE AND OPERATIONS

March 19, 1992

Mr. William Paty  
Chairman  
Board of Land and Natural  
Resources  
State of Hawaii  
Kalanimoku Building  
Honolulu, Hawaii 96813

Attention: Mr. Don Horiuchi

Dear Mr. Paty:

Subject: Lyon Arboretum  
Greenhouse Construction  
University of Hawaii at Manoa  
TMK: 2-9-55:06

The Lyon Arboretum, a botanical research and instructional unit of the University of Hawaii, is again proposing to construct a greenhouse at the site that was approved under CDUA No. OA-2/14/83-1552A. This application expired on September 12, 1989 and because of the lack of funds at the time, the greenhouse was not built. However, funding is now available for construction; therefore, we would appreciate it if you would consider reinstating the expired CDUA for the construction of the greenhouse.

If there are any questions, please contact Mr. Myron Kanemori of the Facilities Planning and Management Office at 956-4073.

Thank you for your consideration of this request.

Sincerely,

*Ralph T. Horii, Jr.*

Ralph T. Horii, Jr.  
Vice President for Finance  
and Operations

cc: Stan Hayashi, DAGS  
Allan Ah San, UH Campus Operations  
Clyde Akita, UH Facilities Planning



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
P. O. BOX 621  
HONOLULU, HAWAII 96809

WILLIAM W. PATY, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

LIBERT K. LANDGRAF  
DEPUTY

AQUACULTURE DEVELOPMENT  
PROGRAM  
AQUATIC RESOURCES  
CONSERVATION AND  
ENVIRONMENTAL AFFAIRS  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

FILE NO.: OA-1552A  
180-Day Exp. Date: 8/17/88  
DOCUMENT NO.: 3810E

JUL 14 1988

Honorable Russel S. Nagata, Comptroller  
Department of Accounting and  
General Services  
P. O. Box 119  
Honolulu, Hawaii 96810

Dear Mr. Nagata:

SUBJECT: Amendment to Conservation District Use Application  
OA-1552A for the Lyon Arboretum

We are pleased to inform you that your request to amend  
Conservation District Use Application OA-1552A for roadway  
improvement at the Lyon Arboretum was approved on July 8, 1988  
subject to the previous conditions of CDUA OA-1552A.

Please acknowledge receipt of this permit by signing in the space  
provided below and returning a copy to us.

Should you have any questions on this approval, please feel free  
to contact our Office of Conservation and Environmental Affairs  
staff at 548-7837.

Very truly yours,

WILLIAM W. PATY, Chairperson  
Board of Land and Natural Resources

Receipt acknowledged

  
Applicant's Signature

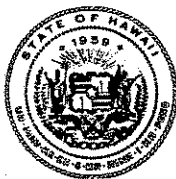
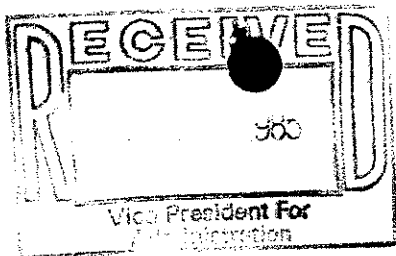
cc: Oahu Board Member  
Oahu Land Agent  
University of Hawaii Procurement and  
Property Management Office

DLNR  
OCEA

88 JUL 28 AM 7:56

RECEIVED

GEORGE R. ARIYOSHI  
GOVERNOR OF HAWAII



565  
977  
SUSUMU ONO, CHAIRMAN  
BOARD OF LAND & NATURAL RESOURCES  
EDGAR A. HAMASU  
DEPUTY TO THE CHAIRMAN

DIVISIONS:  
AQUACULTURE DEVELOPMENT  
PROGRAM  
AQUATIC RESOURCES  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621  
HONOLULU, HAWAII 96809

REF. NO.: CPO-1516-85  
FILE NO.: OA-2/14/83-1552A  
180-Day Exp. Date: 1/6/86

AUG 27 1985

Mr. Harold S. Masumoto  
Vice President for Administration  
University of Hawaii  
2444 Dole St.  
Honolulu, Hawaii 96822

Dear Mr. Masumoto:

CONSERVATION DISTRICT USE APPLICATION  
to Add a Teaching Greenhouse for  
Lyon Arbortum at Manoa, Oahu

We are pleased to inform you that the Board of Land and Natural Resources at its meeting of August 9, 1985 approved your application subject to the conditions of the original permit set forth in our July 14, 1983 letter.

Please acknowledge receipt of this permit amendment with the above noted conditions in the space provided below. Please sign two copies. Retain one and return the other.

Should you have any questions on any of these conditions, please contact our Planning Office staff at 548-7837.

Very truly yours,

*Susumu Ono*  
SUSUMU ONO, Chairperson  
Board of Land and Natural Resources

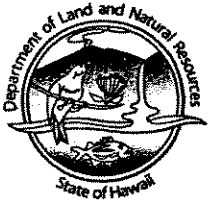
Receipt acknowledged:

*Harold S. Masumoto*  
Applicant's signature

cc: Oahu Board Member  
Oahu Land Agent  
C&C of Honolulu General Planning  
DOH/DPED/OEQC/EC/OHA

Roger \_\_\_\_\_ Post \_\_\_\_\_  
Aki \_\_\_\_\_ Library \_\_\_\_\_  
Anne \_\_\_\_\_ Maude \_\_\_\_\_  
Dean \_\_\_\_\_ Barbara \_\_\_\_\_  
File in 1572A  
To Carol For \_\_\_\_\_

LINDA LINGLE  
GOVERNOR OF HAWAII



**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS**

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON  
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

REF:OCCL:DH

Violation: OA-05-28

**CERTIFIED / RETURN RECEIPT**

7004 0750 0001 8229 2227

Dr. Chuck Hayes  
Interim Dean, College of Natural Sciences  
University of Hawaii at Manoa  
Lyon Arboretum  
3860 Manoa Road  
Honolulu, Hawaii 96822

DEC 15 2004

Dear Mr. Hayes,

SUBJECT: Enforcement File No. OA-05-28

This is to inform you that on Friday, December 10, 2004, the Board of Land and Natural Resources (Board) found the University of Hawaii to be in violation of Title 13-5 Hawaii Administrative Rules, and Chapter 183C, Hawaii Revised Statutes (HRS), in seven (7) instances by failing to obtain the appropriate approvals on subject parcel TMK: (1) 2-9-055:006, Manoa Valley, Honolulu, Island of Oahu, and is subject to the following:

1. The University of Hawaii violated the provisions of Chapter 183C, Hawaii Revised Statutes (HRS), and Chapter 13-5, Hawaii Administrative Rules (HAR), in seven (7) instances by failing to obtain the appropriate approvals for the renovations to Cottages B, C, D, H, and F and the workshop/garage, and the construction of the new structures and land uses (Children's Learning Center, prefabricated storage shed, large greenhouse/head house/shade house/acclimation yard, visitor kiosk, Fern Valley rain shelter and Spice Garden Pavilion, landscaped features, and Commercial Uses. The University of Hawaii is fined a total of \$9,250 for seven Conservation District violations;
2. The University of Hawaii is fined an additional \$1,000.00 for OCCL administrative costs associated with the subject violations;
3. The University of Hawaii shall pay all fines (total \$10,250.00) within thirty (30) days of the date of the Board's action;

EXHIBIT 2



4. That the University of Hawaii submit and execute an after-the-fact (ATF) Conservation District Use Application (CDUA) and Management Plan for subject parcels TMK: (1) 2-9-055:006 and 007, within one-hundred (180) days of the date of the Board's action;
5. No further work shall occur on the subject parcel within the Conservation District without the Board of Land and Natural Resources approval; Chairman's approval and/or OCCL approval. If further work occurs in the Conservation District without the appropriate approvals; the alleged will be fined an additional \$2,000 a day;
6. That in the event of failure of the University of Hawaii to comply with any order herein, the alleged shall be fined an additional \$2,000 per day until the order is complied with; and
7. That in the event of failure of the alleged or the landowners to comply with any order herein, the matter shall be turned over to the Attorney General for disposition, including all administrative costs.

Please acknowledge receipt of this letter, with the above noted conditions, in the space provided below. Please sign two copies. Retain one and return the other within thirty (30) days. Should you have any questions on any of these matters, please feel free to contact Dawn Hegger of our Office of Conservation and Coastal Lands staff at 587-0380.

Sincerely,

*for Dawn Hegger*  
Samuel J. Lemmo, Administrator  
Office of Conservation and Coastal Lands

Receipt acknowledged:

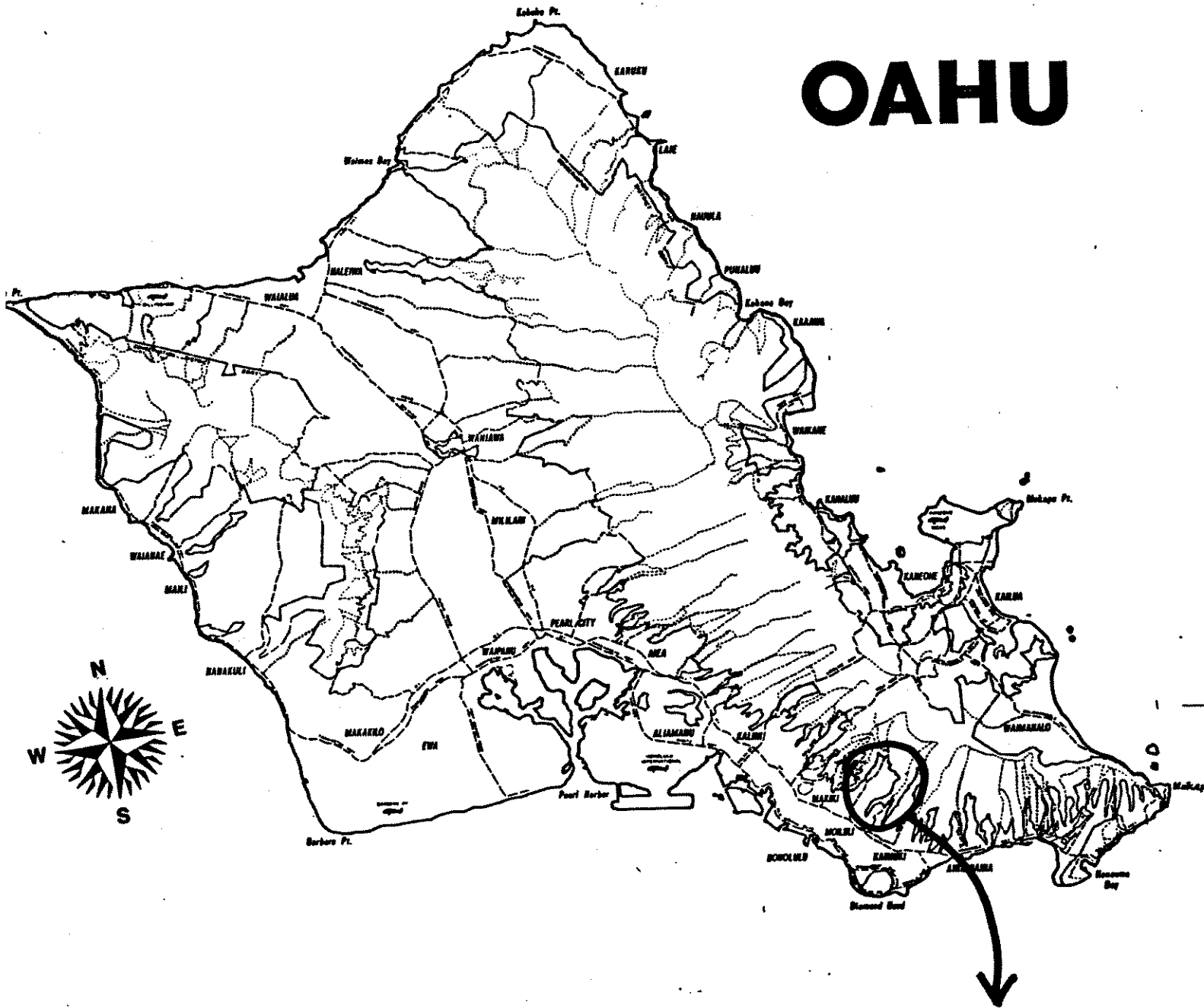
\_\_\_\_\_  
Landowner's Signature

Date \_\_\_\_\_

cc: Oahu Land District Agent  
DOCARE - Oahu Branch  
Sam Kaleo - Chief of Staff  
2444 Dole Street  
Backman Hall 204  
Honolulu, Hawaii 96822  
Del Ogata - U.H. College of  
Natural Sciences  
Ofc. of the Auditor-  
Michele Watanabe  
Ms. Nelly Sugi

This is a detailed topographic map of the Manoa Valley area in Hawaii. The map features numerous contour lines indicating elevation, with labels such as 1000, 1200, 1400, 1600, 1800, and 2000 feet. Key geographical features include the Pahoehoe Flats in the upper left, the Manoa River flowing through the center, and the Manoa Valley Park area. A circular arrow points to a specific location labeled 'PROJECT SITE' near the center of the map. Other labeled locations include 'Gaging Sta.', 'Manoa Falls', 'Manoa Valley', 'St. Louis Heights', 'University of Hawaii', 'Waialeale Spring', 'Noelani Sch.', 'St. Francis Hospital', and 'Manoa Japanese Language Sch.'. The map also shows various roads and trails, including the 'Manoa Valley Rd.' and 'Manoa Falls Rd.'.

# OAHU



Subject Parcel Trk:  
(1) 2-9-055:006  
UH Manoa Lyon Arbore

EXHIBIT 3



# Manoa Valley Lyon Arboretum

Location seismograph station (1960)

Location of <sup>Fern Valley</sup> rain shelter (1970-1980)

Location seismograph cave (1960)

Location water tank / low shed (1920)

Cottage G (1920)

983) Certified Greenhouse  
1930 Greenhouse

Cottage F (renovated)

Cottage E (1930)

Parking structure Covid

Cottage D (renovated)

(1997) Prefab. storage shed

9) Conservation greenhouse

Cottage C (reno)

Cottage B (reno)

Garage / wood work shop

10) Childrens lmn (tr)

Cottage A

13) Snail greenhouse

Stone Garage

Visitor kiosk

Manoa Road

Gazebo & water pond  
(1970) Hong Yip Young Memorial Garden / Spice Garden

Large greenhouse (1967)

Cottage H (Vis. center, offices, classrooms)

Teaching greenhouse

main service road (1920)

improved pathways

proposed rain shelter 80 ft

Aihualama Stream

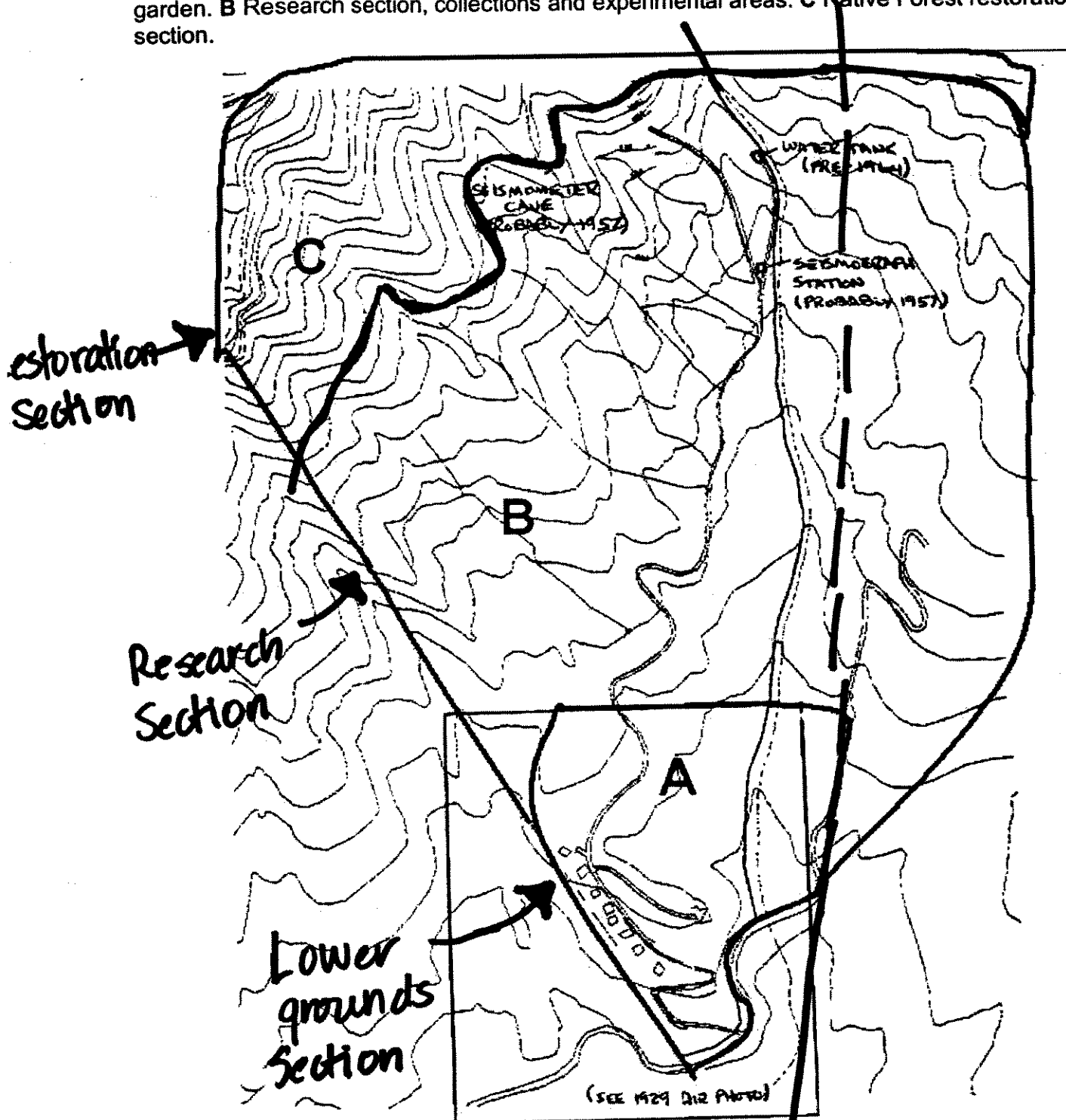
proposed hale wala 150 ft

Loi (existing) 600 ft

Loi

possible nonconforming structure  
altered/renovated/improved  
comp OA-1552 approval

Partial  
 Appendix 1A Map of Lyon Arboretum Management Areas. A Lower Grounds, public botanical garden. B Research section, collections and experimental areas. C Native Forest restoration section.

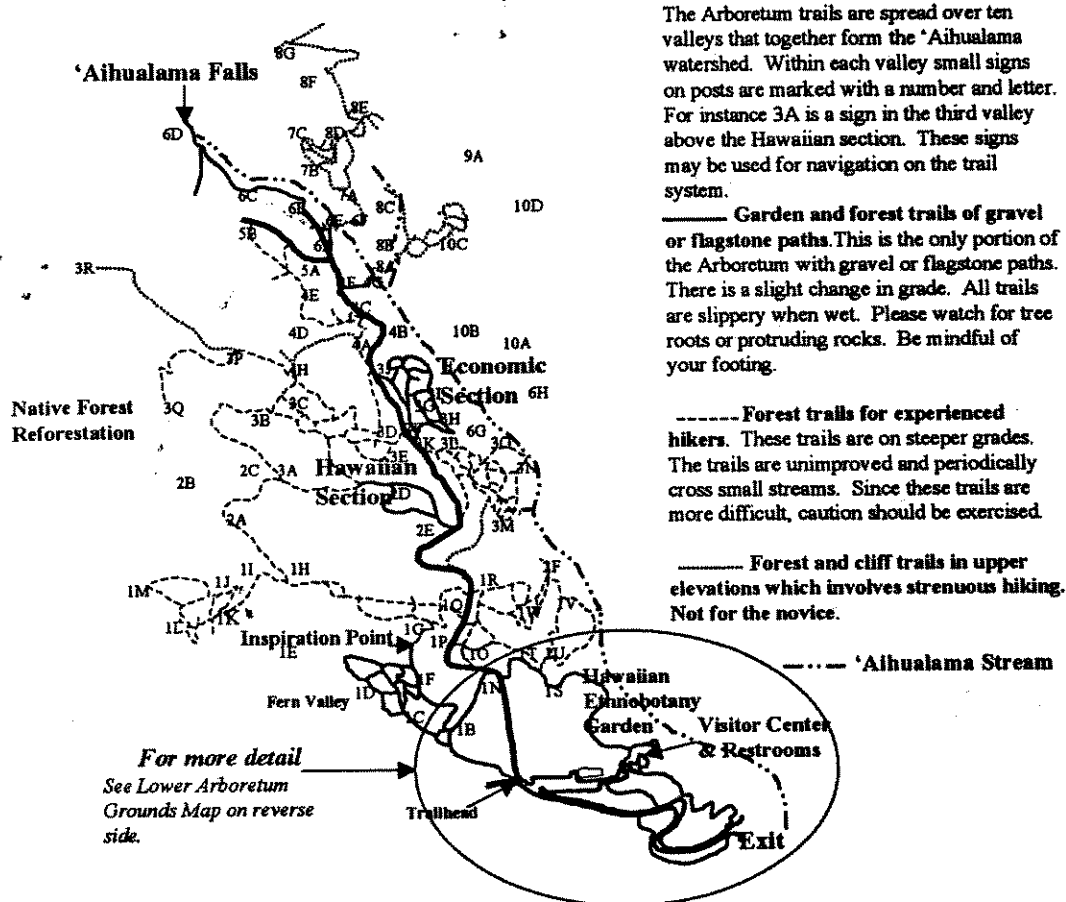


TMK:(1) 2-9-055:006

TMK(1) 2-9-055:0

## Appendix 3. Part A. Map of Lyon Arboretum in 2004.

# Upper Arboretum Hiking Trail Map



## LYON ARBORETUM SAFETY GUIDELINES

**TRAILS:** The paths throughout the Arboretum are comprised of various surfaces. There are gravel lined paths, flagstone paths and dirt trails cut through vegetation. In places, these paths and trails are uneven due to protruding roots or rocks or erosion. Other paths, especially the dirt trails, are narrow. The paths and trails can be slippery because of mud, debris or rainfall. It is important to wear appropriate footwear. Be aware of downed limbs and falling branches. Please exercise caution throughout the Arboretum.

**BITES/STINGS:** Mosquitoes, bees, wasps, and other insects may be encountered. Insect repellent is recommended. Harmful animals such as spiders or centipedes may be hidden under leaf litter or rocks.

**STREAMS:** Avoid entering streams and ponds, especially if you have open cuts or wounds. Harmful bacteria like leptospirosis might be present. **DO NOT** drink stream water. Never cross a flooded stream. Gentle flowing streams can quickly become deep muddy torrents. Avoid crossing swift flows when the water level is above your knees.

**PLANTS:** Do not eat or taste any of the plants. **REMOVAL OF PLANTS IS PROHIBITED.**

**ROCK SLIDES AND FALLING ROCKS:** Avoid the base of steep cliffs, narrow canyons and waterfalls whenever possible. Fallen rocks and mud slides indicate hazards.

**THE FOLLOWING ACTIVITIES ARE PROHIBITED:**

- Destruction, disturbance or pollution of waterways
- Introduction of outside plants
- Introduction of outside animals, birds, fish or aquatic animals



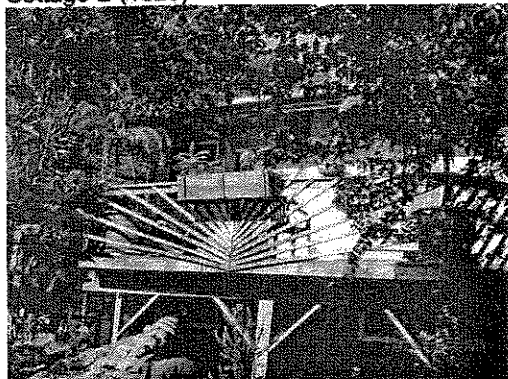
UH MANOA LYON ARBORETUM  
SITE INSPECTION  
OCTOBER 14, 2004



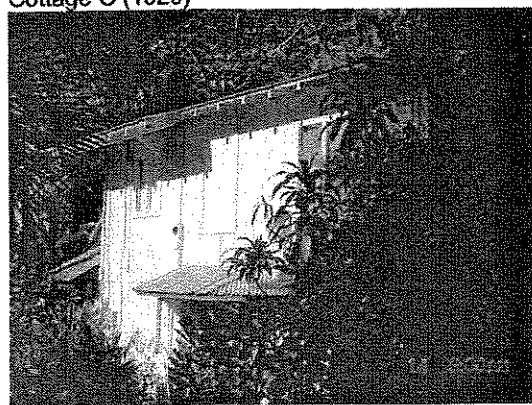
Cottage A (1930)



Cottage B (1920)



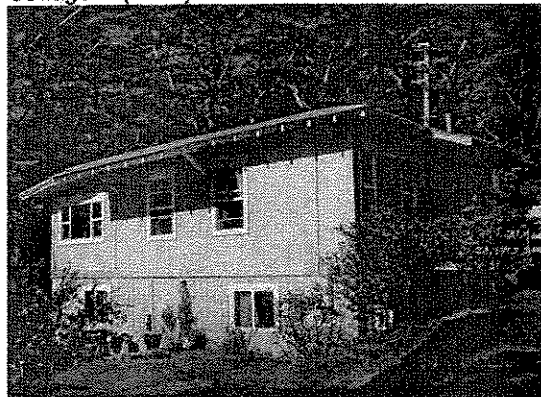
Cottage C (1920)



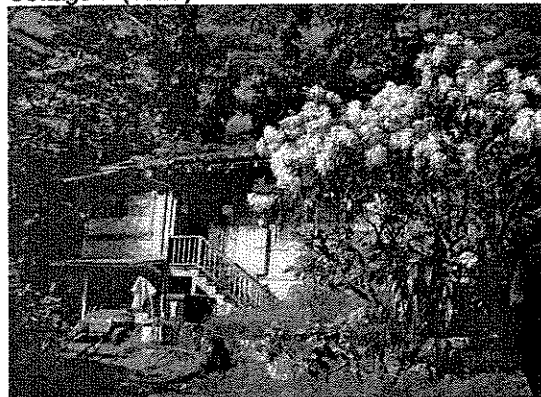
Cottage D (1920)



Cottage E (1920)



Cottage F (1920)

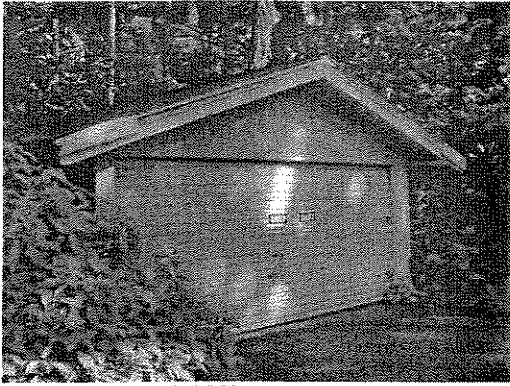


Cottage G (1920)



Cottage H (visitor center, 2 classrooms, garden club ofc., Lyon Arboretum ofc.) (1920)

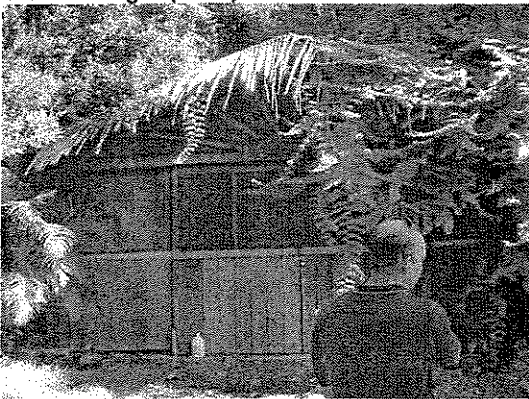




**Stone Garage (1930)**



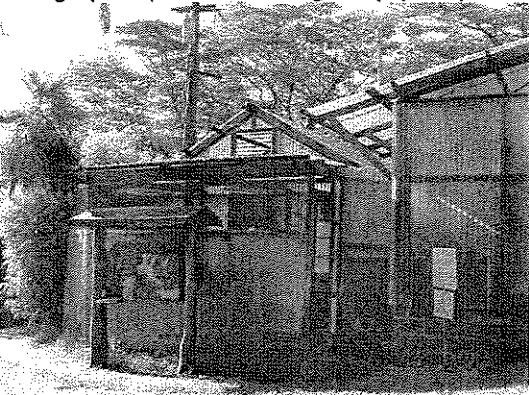
**Greenhouse (1967)**



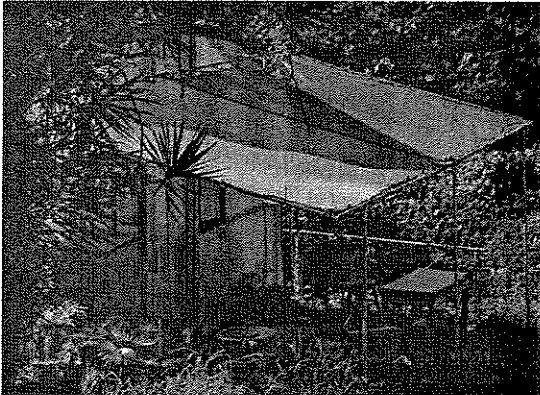
**Garage (1940) Woodworking shop (1990)**



**Greenhouse**



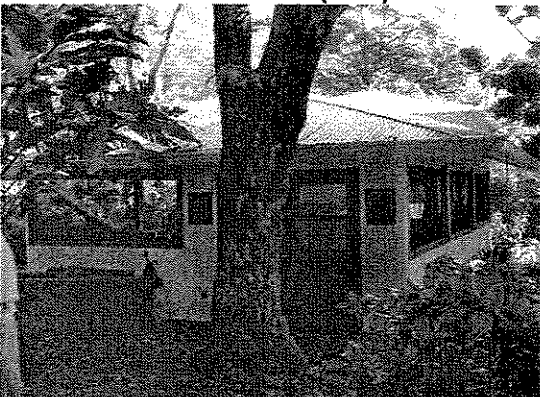
**Green house (1930) / Greenhouse (1985)**



**Conservation Greenhouse (1997)**

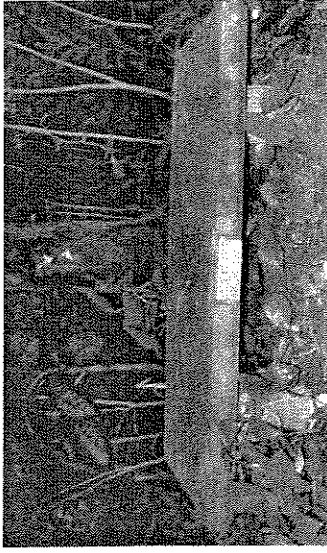
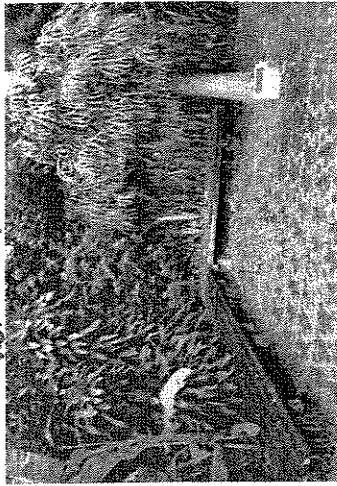


**Snail Green Houses (1990-1995)**

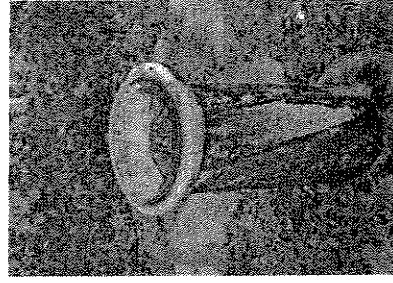
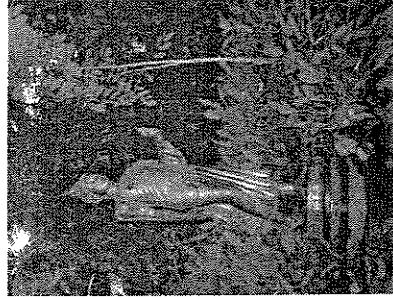
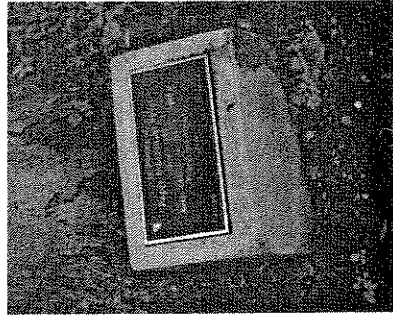


**Children's Learning Center (1999-2002)**

band areas →

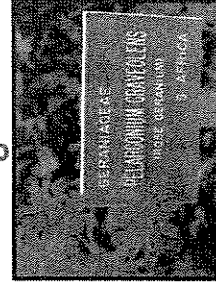
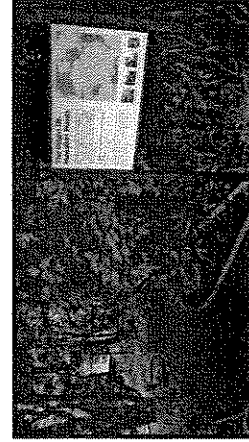
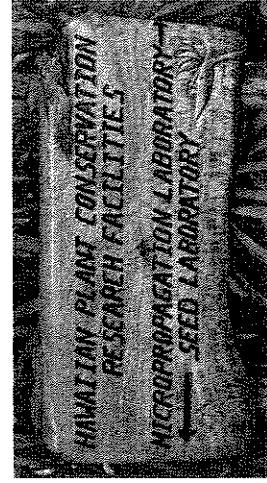


Benches

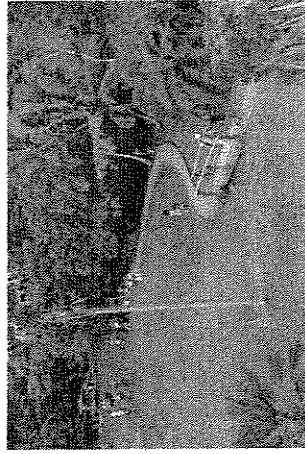


Statutes &  
sundials

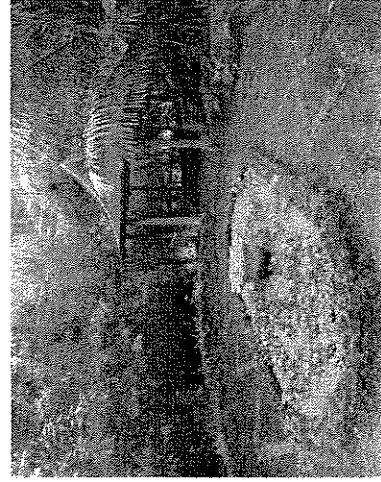
Signs



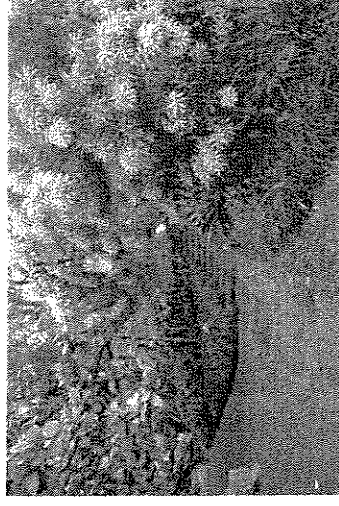
Trails & pathways



Fern Valley rain shelter

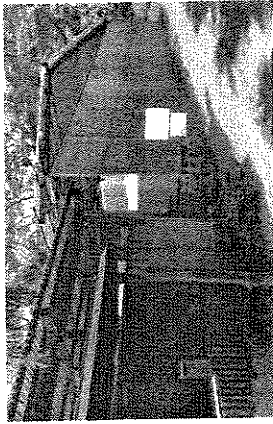


Sptoe Garden Pavilion & pond & fountain

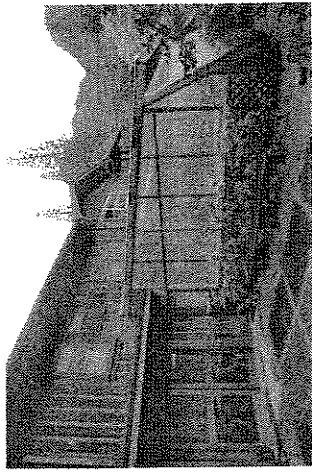


Loi adjacent to Aihualama Stream

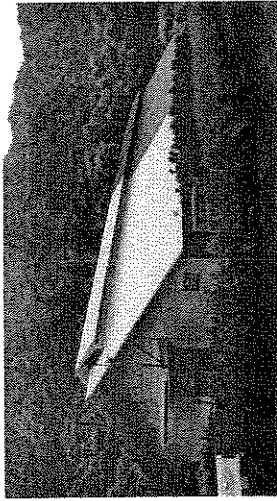




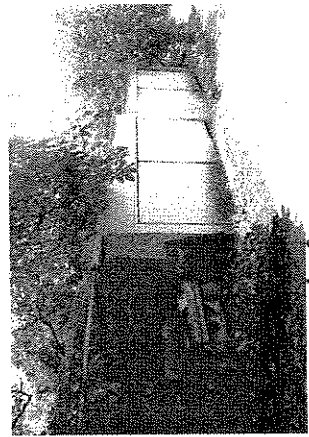
Greenhouse  
by Cottage C



Greenhouse  
attached  
Cottage H



Main  
greenhouse



Workshed by Cottage B



Cottage H and greenhouse



Overview of Lyon Arboretum